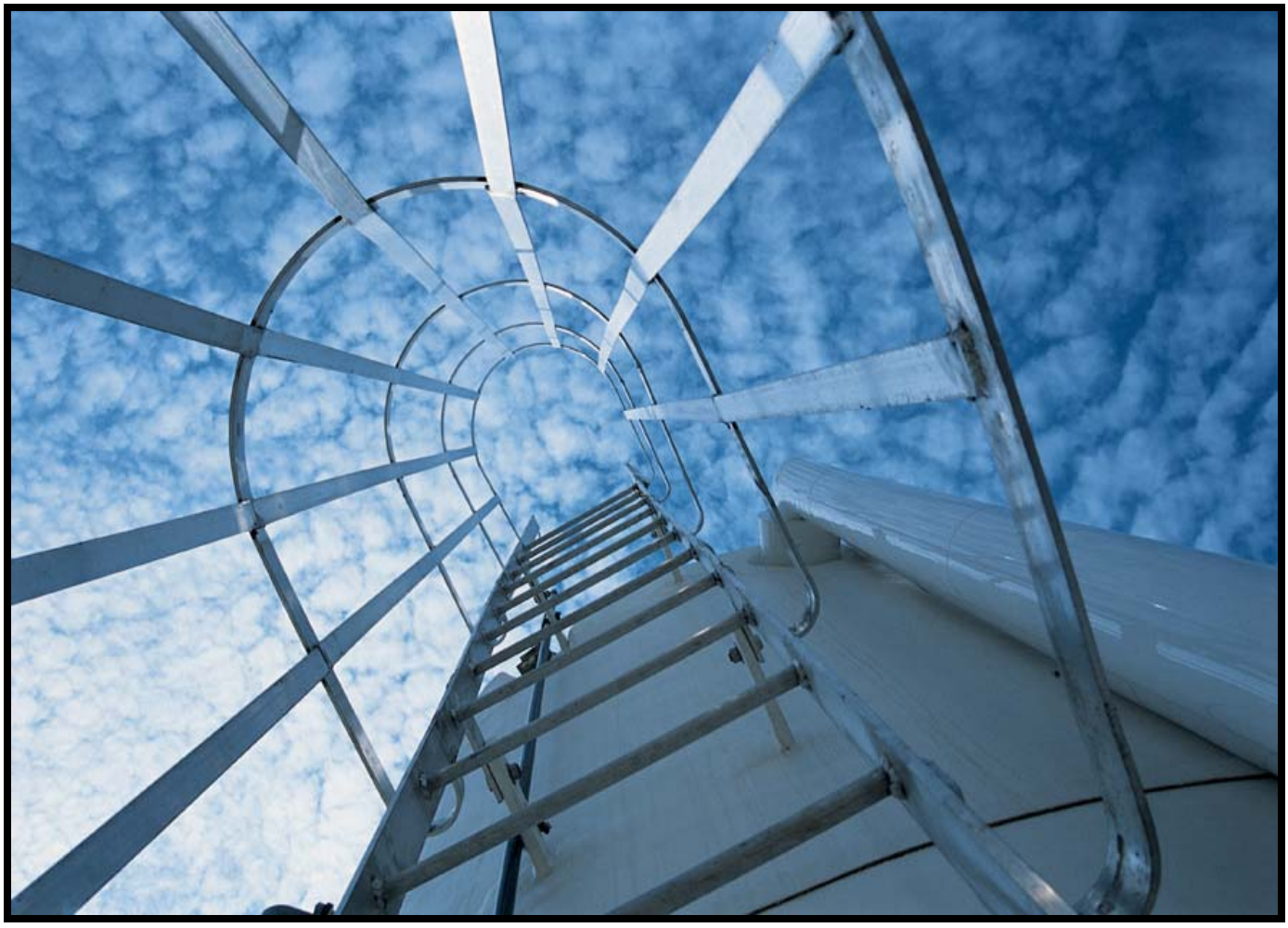
Water System Security and Emergency Response Planning



Washington State Department of Health
Environmental Health Programs
Division of Drinking Water

Enhance your security and be prepared to respond to an emergency

January 2003
DOH PUB. #331-199

For more information or additional copies of this pamphlet contact:

Training and Outreach Section
Division of Drinking Water
Department of Health
PO Box 47828
Olympia, WA 98504-7828
(360) 236-3164

Mary Selecky
Secretary of Health

Bill White
Assistant Secretary, Environmental Health

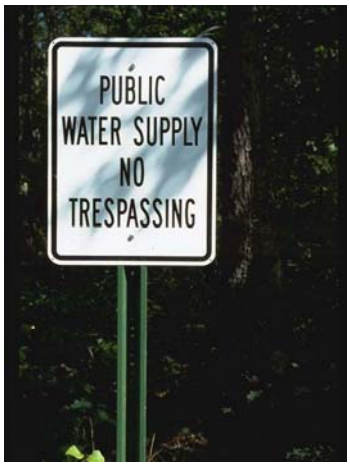
Gregg Grunenfelder
Director, Division of Drinking Water

Security and emergency response planning are more important than ever

Security and emergency response have long been essential in managing drinking water systems, and they are high priorities for the Department of Health (DOH).

Historically, water system security and emergency response activities have focused on vandalism, contamination, and natural disasters. However, after the September 11, 2001 terrorist attacks, the idea of what constituted a credible threat to drinking water supplies changed.

The September 11 attacks and recent natural disasters such as the February 2001 earthquake have heightened concerns among drinking water professionals and citizens about the security of safe and reliable drinking water. Natural events and intentional acts of destruction that previously seemed unlikely or "low risk" are now important considerations.



This heightened emphasis on emergency planning and infrastructure security has been evident throughout the nation. The federal government has set forth new requirements for assessing system vulnerabilities and developing emergency response plans. Water systems, federal and state agencies, and industry associations like the American Water Works Association have all been busy developing training and technical assistance materials to help water systems be better prepared to deal with emergencies.

Federal vulnerability assessment and emergency response planning requirements for water systems

The Bioterrorism Act of 2002 requires community water systems to complete vulnerability assessments by certain dates according to population served. Within six months of the deadline for completing a vulnerability assessment, the systems must also develop or revise their emergency response plans and incorporate the results of the vulnerability assessment. (See table below.)

Population served	Vulnerability Assessment completion date	Emergency Response Plan completion date
25 - 3,300	Not applicable	Not applicable
3,301 - 49,999	June 30, 2004	December 31, 2004
50,000 - 99,999	December 31, 2003	June 30, 2004
100,000 or greater	March 31, 2003	September 30, 2003

Water systems are required to submit their vulnerability assessments directly to the Environmental Protection Agency. Instructions for submitting a vulnerability assessment are available at www.epa.gov/safewater/security. Important: Please do not submit them to the Department of Health.

Planning ahead is critical

Safe and reliable drinking water is vital to every community. Protecting drinking water supplies is a high priority for the Washington State Department of Health, local health jurisdictions and water system owners, managers and operators.

Emergencies may result from natural disasters, equipment failure, unintentional human error, or intentional acts such as vandalism or terrorism. All public water systems, from the smallest to the largest, should have an emergency response plan for guidance during such emergencies. As part of the plan, the water system needs to assess security measures that will help the system guard against an attack.

Stop for a moment and think about how you, as a water system professional, would react if you were suddenly faced with a catastrophic event or intentional act of vandalism or terrorism that shut down the water supply indefinitely. How would you notify customers of the emergency, and what would you tell them? What alternative means for delivering water might be available?

There is no clear definition of what constitutes an emergency. Each one is unique, requiring case-by-case evaluation based on the actual event. Advance planning increases the likelihood that you will respond in an organized and efficient manner. A few minutes can often mean the difference between a minor mishap and a major event. Emergency preparedness planning is an essential function, and is never a wasted effort.

In addition to the more familiar emergencies such as contamination, line breaks, water shortages, and natural disasters, we are now faced with water system security and infrastructure protection issues on a different scale. Continued acts of foreign and domestic terrorism are a very a real threat in America.

Even though it may seem unlikely, it would only take one well-staged event to undermine confidence in drinking water safety in communities across the nation. Being prepared and knowing what to look for are crucial elements of preventing an attack on your system. Contact DOH for additional information on emergency planning.

How might a water system be attacked?

There are many potential threats to drinking water systems. They include:

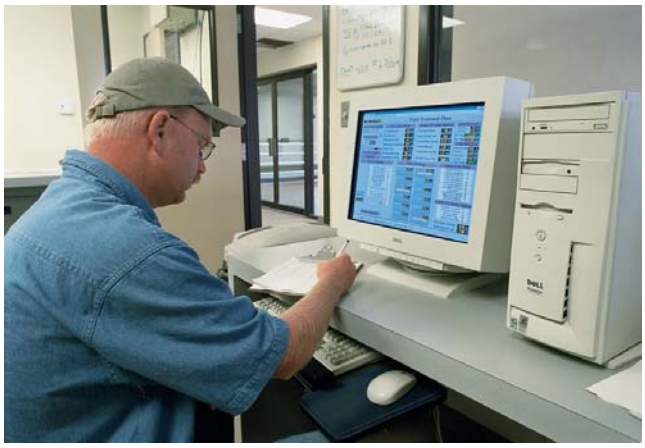
- Chemical, biological or radiological contamination.
- Damage to system infrastructure or computer systems, resulting in supply disruption.

In most cases, contamination with biological or chemical agents would cause the most concern for a drinking water system. Given the size of most water supply systems, it would be difficult to effectively contaminate a water system with these agents due to the sheer volume of contaminants needed to cause harm to people.

Attacks may potentially occur in three areas of a water system:

- Source water
- Treatment plant
- Distribution system

The distribution system would be the most likely point of attack because it is more readily accessible and is a direct link to consumers. Attacking a water system with the intent to cause major damage or harm to people may be somewhat difficult, but the possibility should not be taken lightly. The threat is real, and water supply systems need to be prepared.



Top ten activities for being prepared for an emergency

1. **Prepare or update** an emergency response plan including security considerations.
2. **Post** updated emergency 24-hour contact information in highly visible areas around the water system and give them to key persons and local response officials.
3. **Get to know** your local law enforcement and ask them to add your facilities to their routine rounds.
4. **Fence and secure** your water system facilities and vulnerable areas (e.g. pump houses, well heads, reservoirs) and install adequate lighting around critical facilities such as sources, pump houses, treatment plants, and parking lots.
5. **Watch** for suspicious activity, suspicious mail or deliveries, changes in water quality, and increased customer complaints.
6. **Make security a priority for employees.** Ensure employees know the importance of vigilance and seriousness of security. Provide staff training and checklists on how to handle threats. Rehearse response actions so staff are familiar with the process.
7. **Conduct** a vulnerability assessment to determine vulnerable components and possible disruption points, and identify security measures that need to be considered as part of your emergency preparedness plan.
8. **Designate** an emergency coordinator to ensure effective preparation, communication and procedures for an event.
9. **Identify and establish** agreements for a safe alternative water supply for use in case of supply disruption (e.g. emergency source, water truck, bottled water, intertie).
10. **Know how to** issue a Health Advisory, i.e. boil water order or drinking water warning, in consultation with the Department of Health, Division of Drinking Water officials.

In case of an emergency, follow your chain of command to reduce confusion and optimize response time to the event. If there is a security breach call "911" immediately to inform local law enforcement, then call your regional DOH office (phone numbers on page 4).

Good communications are essential

As part of your emergency and security planning, think about communication and how it may affect your efforts.

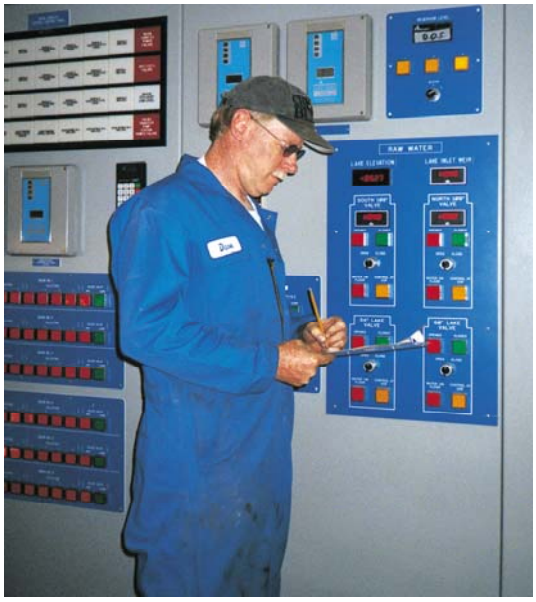
Information is like water—it can be a life-saver in the right amount, and if the quality is good, but it can also kill or injure, if there is too much or too little of it, or if the quality is poor. Good information is more than accurate. It is complete, consistent, timely, and appropriate to the audience.

Managing information requires ongoing attention to achieve and maintain high quality. You must get it from reliable sources and pay attention to how it is stored, processed, and distributed.

During emergencies, people are often concerned or upset, so you must earn their trust in order to effectively communicate with them. How you communicate with people can be just as important as the content of the information you are trying to deliver. Your body language, tone

of voice, and expressions of concern all help lay the foundation for delivering your information.

In an emergency situation, you should understand and plan your messages as carefully as you can. Coordinate with local and state health officials to help develop your key messages and deliver them. Above all strive for clarity. Avoid jargon and technical terms. Also strive for a logical flow of ideas—events in time sequence, activities from high to low priority, or some other way to give a sense of order.



Don't pass up the opportunity to deliver good news once an emergency is over. Thank those who assisted in resolving the event. Ask people to evaluate how communications were handled and to make recommendations for what would work better the next time an event occurs.

Health Advisories

In the event of an emergency where the quality of the water and human health is in question it may be necessary to issue a health advisory. A health advisory is advice and recommendations aimed at the public on how to protect their health when drinking water is considered to be unsafe. These advisories are issued when the health risks to the public are sufficient, in the estimation of the water system administrators, state department of health, and local health officials, to warrant such advice.

Health advisories usually take the form of a drinking water warning or boil water order. Department of Health drinking water officials will work closely with you to help determine if an advisory is needed. In any event, health advisories should be well thought out and provide very clear messages.

Issuing a health advisory will go much more smoothly if you learn something about the process in advance. The Department of Health has put together a packet of tools including fact sheets, brochures, forms, and templates to help water systems prepare for coliform-related health advisories. You can get these tools from DOH at www.doh.wa.gov/ehp/dw/Coliform/coliform.htm

Contact the Department Health for more information and assistance about health advisories or other emergency and security concerns. The phone numbers and websites below may be useful.

Telephone Contacts

Washington State Department of Health, Division of Drinking Water
After Hours Hotline 1-877-481-4901
Northwest Regional Office: (253) 395-6750
Southwest Regional Office: (360) 664-0768
Eastern Regional Office: (509) 456-3115
Security Coordinator: (360) 236-3162

Local Law Enforcement: 911

FBI Emergency Number: (206) 622-0460

Websites

Information and resources are available online to help you plan and prepare for an emergency.

Washington State Department of Health, Division of Drinking Water
www.doh.wa.gov/ehp/dw/

Water system security in Washington State
www.doh.wa.gov/ehp/dw/Security/Water_System_Security.htm

Division of Drinking Water publications
www.doh.wa.gov/ehp/dw/Our_Main_Pages/public.htm

U.S. Environmental Protection Agency—Drinking Water Security
www.epa.gov/safewater/security